

## Vowels vs. consonants as anchors for infixation

This study advances the hypothesis that language learners have inherent expectations (biases) about potential pivots for infixation. Following Yu's (2003, 2007) Salient Pivot Hypothesis, we propose that patterns of infixation targeting acoustically salient pivots should be easier to learn than patterns targeting less salient pivots. The results of an artificial grammar learning study show that a pattern where a VC infix is anchored to the first vowel is more easily generalized than a similar pattern where the first consonant of the stem serves as the anchor. Since vowels are inherently louder and hence more salient than consonants, these results yield some support to the link between acoustic salience and anchors for infixation.

**Method.** Forty native English-speaking students from Pacific Lutheran University were trained on a novel language in which the morpheme [et] attached to CVCV and VCV stems. In the Consonant Pivot condition (n =20), the morpheme was always an infix that attached to the right of the first consonant (e.g., [pako petako], [aka, aketa]). In the Vowel Pivot condition (n=20), the morpheme attached to the left of the first vowel (similar to the pattern found e.g. in Tagalog), and was therefore a prefix when the stem was VCV (e.g., [aka **et**aka]), and an infix when the stem was CVCV (e.g., [pobo petobo]). The shape of the training stimuli is schematized in (1).

### (1) Training stimuli for Consonant Pivot and Vowel Pivot Training Conditions

Stimulus shape	Affixed item in Consonant Pivot	Affixed item in Vowel Pivot
CVCV ( <i>digu</i> )	C <b>et</b> VCV ( <i>detigu</i> )	C <b>et</b> VCV ( <i>detigu</i> )
VCV ( <i>iba</i> )	VC <b>et</b> V ( <i>ibeta</i> )	<b>et</b> VCV ( <i>etiba</i> )

Participants were told that they would be listening to words from a novel language in pairs of singular/plural. The training stimuli contained 12 VCV stems and 12 CVCV stems that were identical for both conditions; the only difference between the Consonant Pivot and Vowel Pivot conditions was whether the [et] morpheme was an infix for VCV items. In the test phase, the participants were shown a stem and two choices of an infixed form, one from Consonant Pivot and the other from Vowel Pivot. The test phase contained 12 old items that were identical to the training set, 12 novel V-initial items, 12 novel C-initial items of the form CVCV, and 12 forms containing a Cr cluster (i.e., CrVCV).

**Results and Discussion.** The results (summarized in (2)) were analyzed using binominal regression with the learned pattern (Consonant or Vowel Pivot), and test condition as fixed effects; item and subject as random effects; items as random slopes. Overall, participants in both conditions learned the pattern, but the participants in Vowel Pivot condition were more likely to choose the correct response for new items ( $\beta = 0.76$ ,  $SE = 0.37$ ,  $z = 2.05$ ,  $p < 0.05$ ). This result is consistent with our hypothesis that vowels will serve as better pivots for infixation than consonants, despite inconsistency in affixation (i.e., appearing as a prefix in some cases and an infix in others).

### (2) Results: Mean Proportion of Correct Items Selected and Standard Deviations

Condition	Old	New-V	New-C	New-CC
Vowel Pivot	0.71 (0.07)	0.80 (0.21)	0.85 (0.12)	0.76 (0.12)
Consonant Pivot	0.72 (0.20)	0.65 (0.25)	0.70 (0.23)	0.61 (0.18)

References:

Yu, A. C. L. (2003). *The morphology and phonology of infixation*. PhD dissertation, UC Berkeley.

Yu, A. C. L. (2007). *A Natural History of Infixation*. Oxford: OUP.